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there is a distinct factor present for the mosaic condition, so that the sex of such plants is not to be looked upon as due to the presence of the male- and female-producing units alone, but to the presence of a factor determining the tendency to be hermaphrodite or monoecious respectively.

The field for investigation which has thus been thrown open is a very inviting one, and it is to be hoped that other dioecious species which have nearly related hermaphrodite or monoecious species among both plants and animals will be made to yield whatever support they may for the generalizations CORRENS has made.—GEORGE H. SHULL.

Plankton of Illinois River

Four years ago, this journal reviewed the first part (1903) of KOFOID'S *Plankton of the Illinois River*,[3] which dealt with the quantitative investigations and general results. There has just appeared the second part, which deals with the organisms of the plankton and their seasonal distribution.[4] The character of the work, with its mass of statistics, forbids an adequate review. As was stated in the preceding review, this series forms the most important contribution yet made to the subject of river plankton, and the work has been carried on with the most painstaking care. In the discussion of species, plants occupy 45 pages, and animals 230. The plant groups considered are Bacteriaceae, Schizophyceae, Chlorophyceae, Bacillariaceae, Conjugatae, and certain seed plants. Some general conclusions in reference to the seasonal changes are stated, conclusions that are promised detailed discussion in a later paper. For example, each month is characterized by certain plankton features, dependent upon a certain range of hydrographic, thermal, and chemical conditions, and of illumination. There is a certain range of component species, and a range of numbers of individuals, the proportions varying from month to month, and constituting one of the main elements in the seasonal changes of the plankton. Transitions from month to month are most profound at seasons of greatest environmental changes, as at the times of vernal increase and autumnal decline in temperatures. In general two types of plankton were found, the summer and the winter, the vernal and autumnal types being only transitions between the two when organisms from both are present. The winter plankton is characterized by a small number of species peculiar to that season, and a number of perennial forms; the summer by a larger number of summer organisms with the perennial forms.

In reference to the question whether the plankton of streams differs from that of lakes and ponds, the author states that it may be distinguished from them in being a mixed plankton (due to the mingling of planktons from all sources in the drainage basin), in being subject to extreme fluctuations in quantity and constitution, and in containing no species peculiar to it.—J. M. C.

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[3] BOT. GAZETTE **37**:472. 1904.

[4] KOFOID, C. A., The plankton of the Illinois River, 1894–1899, with introductory notes upon the hydrography of the Illinois River and its basin. Part II. Constituent organisms and their seasonal distribution. Bull. Ill. State Lab. Nat. Hist. **8**:Article I. pp. vii+360. 1908.

Floral mechanism

Such is the title of a work whose first part has just appeared.[5] In this part twelve types of common spring flowers are selected, all of which are readily cultivated and may thus be kept under continued observation. In the case of each one of these flowers there is a full account of all the details of structure and the problems presented. A definite scheme of work is elaborated, so that in due order all questions are raised and answered. The work is intended for botanical students, teachers of elementary botany, "lovers of flowers," and candidates for examination.

A single example, selected at random, will illustrate the scheme. Under *Viola odorata* the following topics are presented: history, distribution, nomenclature, description, variations, floral diagram, sectional elevation, development, special mechanism, pollination, cleistogamy, monstrosities, fruit and seed, comparison of allied types, theoretical considerations, and note on Fibonacci phyllotaxis systems. All this is illustrated by five plates, three of them colored.

The large page and handsome type are exceedingly attractive, and the colored plates are as fine as we have seen. In short, the whole appearance of the book is ornate. But still, we wonder at its purpose. The author explains this as follows: "The general idea has been the provision of a methodical framework for the inclusion of all facts of observation and experiment, which may serve as an introductory scheme admitting of progressive elaboration and perfection with the attainment of new information." This sounds as if there was a pedagogical motive; but if it is for the teaching of botany, the tremendous emphasis laid upon a few "type" flowers is something new or something very old; at least it holds no relation to botany as at present developed. If it is a scientific treatise, which the author disclaims, it is too simple and diffuse. If it is for ornament, it is a great success. If it is to give opportunity for the display of admirable printing and three-color work, we have seen nothing better.—J. M. C.

MINOR NOTICES

Kew Index.—The third supplement to this invaluable work has appeared,[6] including names and synonyms of all genera and species from the beginning of 1901 to the end of 1905. The second supplement, which appeared in 1904, and included names through 1900, was under the direction of W. T. THISELTON-

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[5] CHURCH, ARTHUR HARRY, Types of floral mechanism; a selection of diagrams and descriptions of common flowers, arranged as an introduction to the systematic study of angiosperms. I. Types I–XII (Jan. to April). Royal 4to. pp. vii+211, with 39 colored plates and numerous figs. Oxford: Clarendon Press. 1908. $6.75.

[6] Index Kewensis plantarum phanerogamarum. Supplementum tertium. pp. 193. Oxford: Clarendon Press. 1907. 28*s*.